
Product Lines, Open Systems and Acquisition Practices

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Produce Line Promise

A Product Line is a series of products that contain components that have a set of commonalities, some well-understood variations, and well-planned tailoring capabilities.*

- Product Lines offer significant savings potential
 - Customers enjoy suppliers who offer “across the board” systems and services while maintaining configuration control and allowing for operational differences required for specific uses.
 - Competition stimulates suppliers towards marketing products with performance enhancements, cost economies and state of the art features

* Sholom Cohen, “Guidelines for Developing a Product Line Concept of Operations”
(CMU/SEI-99-TR-008)

Promise of Open Systems

Open Systems - An approach of developing systems using widely supported commercial interface standards.

- DoD is promoting Open Systems within the acquisition community to :
 - Combat obsolescence
 - Access new technologies
 - Increase access to commercial suppliers
 - Remove vendor dependence (especially from defense unique parts)
 - Improve sustainment

Open Systems and Product Lines

- Open Systems focus on interface standards. The approach is based on the application of a disciplined systems engineering process and well-defined open interfaces.
- The intention of a Product Line is large-grained reuse of components and straightforward inexpensive assembly of systems from components.
 - Both approaches require well-defined architectures and systems engineering processes.
 - Open Systems allow product lines to reuse components that are not vendor proprietary.
 - They also facilitate tailoring of product lines for specific user requirements.

Potential for DoD product lines

- Airplanes contain a number of avionics functions that could be the basis for a product line
 - e.g. Bold Stroke, OSALA, AV-8B
- Extending product line notions to:
 - Surface vehicles
 - Missiles
 - Communications and Surveillance

Customer Defined Product Lines

- Roles
 - Defining Domains
 - Defining and owning architectures
- Responsibilities
 - Establishing management functions
 - Success/failure borne by customer!
 - Oversight

What's the Future for Product Lines in DOD?

- Product lines are a natural use of Open Systems approaches
- Natural groupings of systems in which there are common functions allow shared development investments, and
- provide significant advantages in system sustainment.
- However, recent experience favors supplier-initiated approaches (with customer buy-in) rather than customer-initiated product lines.